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ABSTRACT

This study was designed (1) to replicate and extend previous research on the misidentification phenomenon and (2) to test possible explanations for the phenomenon. Seventy-two preschool children were read one of three story books in which a male is presented in a traditionally female role and a female is presented in a traditionally male role. Book 1 concerned a doctor and a nurse; Book 2, an executive and a secretary; Book 3, a principal and a teacher. Children were further divided into a group which was asked to identify the male and female during the story and a group that was not. All children were asked to identify the male and female by role at the conclusion of the story. Some misidentification in the direction of sex-role stereotypes was observed in each book condition. Asking children to identify the male and female in mid-task did not increase the proportion of children who were correct in identifying the male and the female post-task. Also, there was some indication that ability to respond correctly on traditional tests of conservation may be related to the ability to identify correctly counterstereotyped instances of role models. (Author/MP)

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Misidentification of Counterstereotyped Role Models in Four- and Five-Year-Old Children

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Abstract

Seventy-two preschool children were read one of three story books in which a male is presented in a traditionally female role and a female is presented in a traditionally male role. Book 1 concerned a doctor and a nurse; Book 2, an executive and a secretary; Book 3, a principal and a teacher. Children were further divided into a group which was asked to identify the male and female during the story and a group that was not. All children were asked to identify the male and female by role at the conclusion of the story. Some misidentification in the direction of sex-role stereotypes was observed in each book condition. Being asked to identify the male and female in mid-task did not increase the proportion of children who were correct in identifying the male and the female post-task. Also, there was some indication that ability to respond correctly on traditional tests of conservation may be related to the ability to identify correctly counterstereotyped instances of role models.

Misidentification of Counterstereotyped Role Models in Four- and Five-Year-Old Children

Children are exposed to occupational sex types in television (Dominick & Rauch, 1972; Long & Simon, 1974; Sternglanz & Serbin, 1974), books (Women on Words and Images, 1975), and real-life interactions (Current Population Reports, 1976). The sex-typing information in these presentations has an effect on children as measured by vocational aspiration and classification studies in which children sex-type occupations in accordance with the information to which they have been exposed (Garrett, Ein, & Tremaine, 1977; Looft, 1971a; 1971b; Papalia & Tennett, 1975; Scheresky, 1977). Research also indicates that occupational sex-types may have an effect on how children perceive or process information. For example, in recent research in which children aged two to seven have been exposed to a story about a male nurse and a female doctor and then asked in a post-story identification test to point to the doctor and the nurse, the modal child at each age level misidentifies the male as the doctor and the female as the nurse (Cordua, McGraw, & Drabman, 1979; Drabman, Robertson, Patterson, Jarvie, Hammer, & Cordua, Note 1; Patterson, Drabman, McGraw, & Cordua, Note 2). The misidentification of the doctor and the nurse attests to the strength of children's sex-types for these professions. It also, however, raises the question of how children, even though they do possess a given stereotype, could possibly fail to report accurately a simple fact to which they have been exposed. The present research was designed as a replication and extension of the

misidentification phenomenon in which possible explanations for the phenomenon were tested.

One possible explanation is that somewhere between input of the sex-role information available in the story and its output on the post-story identification test, the information is transformed to be congruent with the stereotype of male-doctor and female-nurse. If so, when the transformation takes place could perhaps be determined by asking children to identify the sex-role pairings at the time of input as well as at the end of the story. For this reason, one group of children in the present study was interrupted during the presentation of the story and asked to identify the male and female characters. If the children were incorrect at this point as well as incorrect later, there would be evidence that the sex-role transformation took place prior to encoding, a situation best conceived of as misperception. If children were correct at the point of interruption but incorrect later, there would be evidence that the sex-role information was transformed in memory.

A second possible explanation for the misidentification phenomenon is that it reflects children's level of cognitive development. This hypothesis gains strength from a similarity between Piaget's tests for conservation and the test for misidentification that has been used in previous research (Cordua et al., Note 1; Patterson et al., Note 3). The similarity is that children fail conservation tests because the perceptual arrangement of materials in the post-transformation test compels preoperational children to make an intuitive judgment that is at

odds with rational judgment. For example, the preoperational child will pick one glass over another as containing more liquid because it looks as if it has more liquid at the moment. Whatever demonstrations one has made of equality previously are simply not entertained as relevant to the present judgment. In much the same manner, it is possible that children in the identification test select the person that looks most like a doctor or a nurse at the present while ignoring previous information as irrelevant. If this is the case, performance on standard tests of conservation should correlate highly with performance on the identification test--at least for those children who in fact believe that men look like doctors and females look like nurses. As a first step toward testing this hypothesis, subjects in the present study were assessed on tests of conservation, and the correlation of conservation test performance with identification test performance was calculated.

A final purpose of the present research was to assure that the misidentification phenomenon was not restricted to the professions of doctor and nurse. If so, it would greatly limit interest in the phenomenon. The professions used were ones that according to normative data (Garrett, Ein, & Tremaine, 1977; Scheresky, 1976; Shepard & Hess, 1975) are not as strongly stereotyped as doctor and nurse.

Method

Subjects

Thirty-six male and thirty-six female children ranging in age from 50 to 71 months (mean age 55.2 months) from kindergartens in the vicinity of Jackson and Oxford, Mississippi, were used as subjects in this study.

The children were white and, based on their parents' occupations, were classified as predominantly of middle socioeconomic status. Return of a parental consent form for participation was the basis for a child's inclusion in the study. For each child, demographic data, which included date of birth, present age, sex, occupation of parents, kindergarten attended, and relevant information concerning visits to the doctor, were recorded. Each child was randomly assigned to groups and book conditions and tested individually. There were 12 children assigned to each cell of the 3 (books) x 2 (groups) design.

Materials

Three books in which occupational roles were counterstereotyped according to sex were composed as stimulus material for this experiment. Book I described a boy's visit to a medical clinic where he met a female physician and a male nurse. In Book II the boy visited an office building where he met a female executive and a male secretary, and in Book III the boy visited a school where he met a female principal and a male teacher.

The books were patterned in format after children's picture books. Color photographs, which were 3½ x 5 inches, illustrated each story, and the narrative script that told about each picture was printed below. Models, except for the boy, were all in their twenties and were dressed appropriately for their roles as doctor, nurse, executive, secretary, principal, and teacher.

Except for the specific counterstereotypes presented, the books were made to be as similar as possible. First, the storyline of the visits was the same in each book. Second, all professions received equal emphasis and time in the script. Third, gender-role pairings were made by having the three adults (two role models and the mother who accompanied the child) explicitly state the pairings at least one time each. For example, the male model paired his name and role in each book with the statement, "My name is Michael Thomas, and I am a nurse/secretary/teacher."

Procedure

In each school, children were taken individually to a testing room to be read a story. Prior to reading, the experimenter engaged in a brief conversation with the child to establish rapport. Next, children were screened to insure that the occupational titles used in the stories were familiar to them. For example, for Book I the children were asked, "What do we call the person that we go to see when we don't feel well?" and, "What do we call the person who helps the doctor?" If the responses "doctor" and "nurse" were not given, the experimenter supplied the title and a one-sentence description of the occupation. Then the experimenter repeated the initial questions. Similar questions were asked for Books II and III. Only children who correctly named the professions either the first or second time were included in the study. Three children were dropped for failing to respond correctly to this set of questions.

The story was introduced as follows: "You are going to hear a story about a boy's visit to a doctor (or other appropriate setting). Listen to what the people say and look at what they do in the story because you will be asked some questions about the story later. Try to remember as much as you can." The experimenter then read the story to the child.

When the story was completed, the children were shown a photograph of one of the professionals from the story and asked to identify that person by recognizing his or her name as used in the story. For example, the children were shown a picture of the man in the story and asked, "Was this man's name Michael Thomas or Bill Allen?" Next the children were shown a picture of the woman and asked, "Was this woman's name Ann Carroll or Lynn Francis?" One of the names was correct, and the other was a distractor. The order of the distractor and the true names and whether children were asked about the man or the woman first were counterbalanced. Of the five questions which were presented to the children, these questions concerning recognition of names were presented as one and three in the sequence. The purpose of these questions was to serve as a screen for inattentive children. Fifteen children were dropped for failing to answer these questions correctly. Children were required to identify the professions played by the man and the woman in questions two and four. Those children who correctly identified the female as Ann Carroll were then asked, "Was she a _____or a _____?", with the blanks representing the labels for the two professions to which the child had

been previously exposed. Likewise, children who correctly identified Michael Thomas as the male model were asked, "Was he a _____or a _____?".

After the children had been asked to recognize the names and to identify the professions of the man and the woman in the story to which they had been exposed, they were asked, "How could you tell which one was the doctor/executive/principal and which one was the nurse/secretary/teacher?" This question was included to aid in the interpretation of questions two and four. Again, title order was counterbalanced.

Although the content of the stories read to Groups I and II did not differ, the presentation of the stories did. The story was interrupted two times for the children in Group II. Immediately after the introduction of the first main character, the experimenter turned to a blank page in the picture book and asked, "What did the man/woman say?" If no information such as character's name or occupation was given, the child was asked, "What is his/her name?" and "What does he/she do?" If only the character's name was given, then the latter question was asked. Children who refused to respond or who supplied an occupation other than the appropriate one (e.g., doctor or nurse for Book I) were to be dropped from the study. No children were excluded for this reason however. When the second main character was introduced, the same form of questioning followed. After the story was completed, each child was presented with the same questions in the same manner as the children in Group I.

Prior to the conservation tasks, the children were pretested on their knowledge of the concepts of "more" and "less". Number and liquid quantity conservation tests were then administered using a procedure outlined by Brainerd and Brainerd (1972).

After receiving encouragement not to discuss the session with their classmates, the subjects were returned to their classroom.

Results and Discussion

Children's responses to the questions concerned with identification of the profession portrayed by the male and female models were of three types: Correct--both the male and the female were correctly identified by profession; Partially Stereotyped--either the male or female but not both was misidentified; Stereotyped--both the male and the female were misidentified.

Although some degree of misidentification occurred for each of the three books, it was strongest for the doctor-nurse book where 13 of 25 children gave stereotyped answers. For the executive-secretary book, the comparable figures were 4 of 25, and for the principal-teacher book, 1 of 22. These results are given in Table 1. They are in keeping with what one would expect given the normative data (Garrett et al., 1977; Scheresky, 1976; Shepard & Hess, 1975) which indicate that the professions of doctor and nurse are more strongly stereotyped than those of executive and secretary which in turn are more strongly stereotyped than the professions of principal and teacher. From these results one can conclude that the misidentification phenomenon is not limited to doctor and nurse

because of some peculiar characteristic either of these professions or the way children learn about them.

Insert Table 1 about here

Eight children in the sample of 72 four- and five-year-olds gave partially stereotyped responses in the post-story identification test. Half of the misidentifications were in the direction of male stereotyping of occupations (i.e., male nurse identified as doctor) and half in the direction of female stereotyping (i.e., female doctor identified as nurse). These data do not contribute to the general finding in sex-typing research that partial stereotypes are sex specific (Cairns, 1978, pp. 277-278; Cordua et al., 1979).

Overall, as shown in Table 2, 53.2 % of the children who were interrupted after the introduction of the male and female characters (Group II) were correct on both questions on the post-story identification test and 46.8% of the Group I children were correct. These proportions do not differ, t (70) < 1. Thus interruption per se, perhaps by merely calling greater attention to the sex-role pairings, did not result in a smaller percentage of partially stereotyped and stereotyped responses. Interruption did, however, appear to increase the probability of a partial stereotype in that seven of the eight partially stereotyped identifications were made by Group II subjects.

Insert Table 2 about here

Because Group II was designed to test the hypothesis that children who failed the post-story identification test did so because they transformed the sex-role information presented to them, comparisons were made of correct and incorrect identifications in the interruption and post-story tests. The results presented in Table 3 indicate a lack of consistency in type of identification made upon interruption and post-story examination. Of the 10 children who misidentified the female, seven correctly identified her on the interruption test and misidentified her on the post-story test, whereas three misidentified her on both tests. Of the 11 children who misidentified the male, four correctly identified him on the interruption test and misidentified him on the post-story test, while seven misidentified him on both tests. These data are obviously equivocal with regard to the transformation question. Furthering the difficulty of interpreting the Group II data is the fact that five children incorrectly identified the models upon interruption but correctly identified them on the post-story test. Theoretically, there should have been no responses in this category. The fact that there were such responses casts some doubt on the validity of the interruption test as a measure of what is encoded in memory.

Insert Table 3 about here

Another question of interest to be answered by the data was whether level of cognitive development accounted for misidentification. A Kendall's Tau correlation coefficient was used to compute for the sample the correlation of level of cognitive development and response on the post-story identification test. The three levels of cognitive development which were used were: Nonconserver (passed neither test of conservation), Conserver I (passed one test of conservation), and Conserver II (passed both tests of conservation). The relationship between level of cognitive development and response was significantly greater than chance, $\tau = .196$, $p < .05$. The data on which the correlation was based are given in Table 4. With age held constant, the Kendall's Partial Rank Correlation coefficient between level of cognitive development and response pattern was .173, indicating that age was not a contributing factor in the Kendall correlation.

Insert Table 4 about here

Interestingly, of the 25 children who gave either a partially stereotyped or a stereotyped answer on the post-story identification test, 20 were nonconservers. The remaining 5 passed the number but not the liquid conservation task. None of the four children who passed both tests of conservation gave an incorrect answer on the identification

test. Focusing just on these three cells in the design, then, one can see that the results are in close conformity with the hypothesis. The large number of children who were nonconservers yet correct on the post-story test is the result which weakens the overall correlation. For this reason it is important to remember that there were two types of children who were correct on the post-story identification test. First were children who had to overcome a stereotype to give the correct answer, and the data of these children are appropriately included in the analysis. Second, however, are children who never had a strong stereotype to overcome. For such children the similarity between Piagetian conservation tasks and the identification test does not hold. Data from these children are inappropriately included, therefore, in the overall analysis. Future research should restrict itself to children who have given independent evidence of a strong sex stereotype for the professions under consideration. Also children should be selected for the study on the basis of conservation test performance to assure a more even distribution of children in the three conservation categories. With these modifications in the present design, a definitive answer can be given to the question of the relationship of level of cognitive development and performance on the identification test.

General Discussion

The present research was designed in part to provide information that would help explain the misidentification phenomenon. One explanation involved the transformation of information. Group II of the present

study was included as a means of assessing when the transformation took place. The equivocal nature of the results from this group, however, has cast doubt on the appropriateness of an explanation in terms of information processing errors. As the data in Table 3 showed, there was consistent relationship between a child's response on the interruption test and that child's response on the post-story test. Thus, it is unlikely that the children who make errors do so either because they misperceive the information initally or because they transform it in memory. It is more likely that when making their judgment they ignore the information that was presented and that they make errors because their concepts of the professions in question include sex as a criterial attribute.

One reason for the belief that children consider sex as a criterial attribute of some occupations is based on the answers given in response to the open-ended question, "How do you know who is the doctor and who is the nurse?" Ten of the 18 children who provided stereotyped or partially stereotyped answers in the identification test referred to gender as their source of information. As one child said, "I know because a nurse is a lady and a doctor is a man."

If it is correct that children's misidentification of males and females in our test results from their belief that sex is a criterion for certain roles in society, then their difficulty with this test can be made clear by an analogy. Imagine that children are shown a story about a duck and a rabbit. The duck says it is a rabbit and hops about eating lettuce, while the rabbit says it is a duck and waddles about

eating grain. This experience would not affect children's belief in the post-test that they should point to the picture of the rabbit and not the duck when asked to indicate the rabbit that was in the story. That knowledge of a child's level of cognitive development should predict the child's answer on the identification test fits well with this explanation because it is the perceptual aspect of the choice situation which makes it so compelling that one should pick the rabbit when asked to "Show me the rabbit that was in the story."

Reference Notes

1. Drabman, R. S., Robertson, S. J., Patterson, J. N., Jarvie, G. J., Hammer, D., & Cordua, G. Children's perception of media-portrayed sex roles. Sex Roles, A Journal of Research (in press).

2. Patterson, J. N., Drabman, R. S., McGraw, K. O., & Cordua, G. The effect of media presentations on the gender stereotyping of occupations: Physician and nurse. Unpublished manuscript, 1978. (Available from Jana N. Patterson, Department of Psychology, University of Mississippi).

References

Brainerd, C. J., & Brainerd, S. H. Order of acquisition of number and quantity conservation. Child Development, 1972, 43, 1401-1406.

Cairns, R. B. Social development--The origins and plasticity of interchanges. San Francisco: W. H. Freeman and Company, 1979.

Cordua, G., McGraw, K. O., & Drabman, R. S. Doctor or nurse: Preschool children's perception of atypical sex-role combinations. Child Development, 1979, 50, 590-593.

Dominick, J., & Rauch, G. The image of women in network TV commercials. Journal of Broadcasting, 1972, 16, 259-265.

Garrett, C. S., Ein, P. L., & Tremaine, L. The development of gender stereotyping of adult occupations in elementary school children. Child Development, 1977, 48, 507-512.

Long, M. L., & Simon, R. J. The role and status of women on children and family TV programs. Journalism Quarterly, 1974, 51, 107-110.

Looft, W. R. Sex differences in the expression of vocational aspirations by elementary school children. Developmental Psychology, 1971, 5, 366. (a)

Looft, W. R. Vocational aspirations of second-grade girls. Psychological Reports, 1971, 28, 241-242. (b)

Papalia, D., & Tennent, S. Vocational aspirations in preschoolers: A manifestation of early sex role stereotyping. Sex Roles, 1975, 1, 197-199.

Scheresky, R. The gender factor in six- to ten-year-old children's views of occupational roles. Psychological Reports, 1976, 38, 1207-1210.

Shepard, W. O., & Hess, D. T. Attitudes in four age groups toward sex roled division in adult occupations and activities. Journal of Vocational Behavior, 1975, 6, 27-39.

Sternglanz, S. H., & Serbin, L. A. Sex role stereotyping in children's television programs. Developmental Psychology, 1974, 10, 710-715.

U. S. Bureau of the Census. A Statistical Portrait of Women in the United States (Current Population Reports, Series P-23, No. 58). Washington, D. C.: U. S. Government Printing Office, 1976.

Women on Words and Images. Dick and Jane as victims! Sex stereotypes in children's readers. Princeton, N. J.: Women on Words and Images, 1975.

Table 1

Response Patterns by Book: Numbers and Percentages

Response	Book I Doctor-Nurse		Book II Executive-Secretary		Book III Principal-Teacher	
	n	%	n	%	n	%
Correct	11	(44)	19	(76)	18	(81.8)
Partial Stereotype	1	(4)	4	(16)	3	(13.6)
Stereotype	13	(52)	3	(12)	1	(4.5)
TOTAL SUBJECTS	25[a]		25[a]		22[a]	

[a]Equal numbers of children were assigned to each book condition, but failure of the attention questions by some resulted in unequal Ns.

Table 2

Response Patterns by Group: Numbers and Percentages

Response	Group I Uninterrupted		Group II Interrupted	
	n	%	n	%
Correct	22	(46.8)	25	(53.2)
Partial Stereotype	1	(12.5)	7	(87.5)
Stereotype	10	(58.8)	7	(41.2)
TOTAL SUBJECTS	33		39	

Table 3

Response Patterns for Identification of Male and Female Models by Children in the Interrupted Story Condition

	Response Pattern		
Model Identified	At Interruption	At Post-test	N
Male	Correct	Correct	26
	Correct	Incorrect	4
	Incorrect	Correct	2
	Incorrect	Incorrect	7
Female	Correct	Correct	26
	Correct	Incorrect	7
	Incorrect	Correct	3
	Incorrect	Incorrect	3
		TOTAL RESPONSES	78

Table 4

Response Patterns: Stage of Cognitive Development by Book Condition

Book and Response	Stage of Cognitive Development		
	I	II	III
	Nonconserver	Conserver: 1 Task	Conserver: 2 Tasks
	(n)	(n)	(n)
Doctor-Nurse			
Correct	5	5	1
Partial Stereotype	1	0	0
Stereotype	10	3	0
Executive-Secretary			
Correct	13	5	0
Partial Stereotype	3	1	0
Stereotype	2	1	0
Principal-Teacher			
Correct	12	3	3
Partial Stereotype	3	0	0
Stereotype	1	0	0
TOTAL SUBJECTS	50	18	4